(d) selecting the logical distribution function of each of the said input variables;
(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;
(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;
(g) solving said equation or equations to produce outputs to produce a Meta Model;
(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;
(i) solving said equation or equations using the incremented or decremented values of one of said input values;
(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;
(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;
(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;
(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;
(n) repeating the process steps h through m for each of the remaining input variables;
(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and
(p) adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map.

8. (NEW) A process for predicting the behavior of a target population under given conditions, comprising:

(a) selecting an equation or set equations that models the behavior of a population;

(b) selecting a range for each input variable in said equation or set of equations;

(c) selecting the number of trials;

(d) selecting the logical distribution function of each of the said input variables;

(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;

(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;

(g) solving said equation or equations to produce outputs to produce a Meta Model;

(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;

(i) solving said equation or equations using the incremented or decremented values of one of said input values;

(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;

(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;

(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;

(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;

(n) repeating the process steps h through m for each of the remaining input variables;

(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and
(p) predicting the behavior of a target population by examining said fuzzy cognitive map.

9. (NEW) A method for processing electro-magnetic signals, comprising:
(a) selecting an equation or set equations that models the behavior of electromagnetic signal;
(b) selecting a range for each input variable in said equation or set of equations;
(c) selecting the number of trials;
(d) selecting the logical distribution function of each of the said input variables;
(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;
(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;
(g) solving said equation or equations to produce outputs to produce a Meta Model;
(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;
(i) solving said equation or equations using the incremented or decremented values of one of said input values;
(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;
(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;
(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;
(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;
(n) repeating the process steps h through m for each of the remaining input variables;
(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and

(p) transforming said electro-magnetic signal based on said fuzzy cognitive map into a useful output.

10. (NEW) A process for creating optimized materials, comprising:
(a) selecting an equation or set equations that models the behavior of a material;
(b) selecting a range for each input variable in said equation or set of equations;
(c) selecting the number of trials;
(d) selecting the logical distribution function of each of the said input variables;
(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;
(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;
(g) solving said equation or equations to produce outputs to produce a Meta Model;
(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;
(i) solving said equation or equations using the incremented or decremented values of one of said input values;
(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;
(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;
(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;
(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;
(n) repeating the process steps h through m for each of the remaining input variables;
(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and
(p) adjusting the chemical and/or the structural characteristics of said material using said fuzzy cognitive map.

11. (NEW) A method for optimizing a process, comprising:

(a) selecting an equation or set equations that models the behavior of a process;

(b) selecting a range for each input variable in said equation or set of equations;

(c) selecting the number of trials;

(d) selecting the logical distribution function of each of the said input variables;

(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;

(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;

(g) solving said equation or equations to produce outputs to produce a Meta Model;

(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;

(i) solving said equation or equations using the incremented or decremented values of one of said input values;

(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;

(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;

(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;

(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;

(n) repeating the process steps h through m for each of the remaining input variables;

(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and

(p) adjusting said process, using said fuzzy cognitive map, to optimize said process.

12. The method in claim 11, wherein said process is for the manufacture of products.

13. The method in claim 11, wherein said process is for the organization of a company